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|---|---------------------------------------|---|--|--|
| AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT | | | 1. CONTRACT ID CODE | PAGE 1 OF 14 PAGES |
| 2. AMENDMENT/MODIFICATION NO. 0001 | 3. EFFECTIVE DATE 12 Dec 06 | 4. REQUISITION/PURCHASE REQ. NO. | 5. PROJECT NO. (If applicable) N/A | |
| 6. ISSUED BY Joint Contracting Command -Iraq/Afghanistan (JCC-I/A) F&T Sector Baghdad Iraq APO AE 09348 | | 7. ADMINISTERED BY (If other than item 6) See Block 6 | CODE | |
| 8. NAME AND ADDRESS OF CONTRACTOR (No. Street, county, State and ZIP; Code) | | | () | 9A. AMENDMENT OF SOLICITATION NO. W91GXZ-07-R-0001 |
| | | | X | 9B. DATED (SEE ITEM 11) 2 December 2006 |
| | | | | 10A. MODIFICATION OF CONTRACT/ORDER NO. |
| | | | | 10B. DATED (SEE ITEM 13) |
| CODE | FACILITY CODE | | | |

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☒ is extended, ☐ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning one (1) copy of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATA SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and data specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

**13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS,
IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

| | |
|-----|---|
| () | A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A. |
| | B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b). |
| | C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: |
| | D. OTHER Specify type of modification and authority) |

E. IMPORTANT: Contractor ☐ is not, ☐ is required to sign this document and return ____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

SEE SUMMARY CHANGES

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

| | | | |
|---|------------------|---|------------------|
| 15A. NAME AND TITLE OF SIGNER (Type or print) | | 16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) PHILLIP K. FRAME, JR, LCDR SC, USN | |
| 15B. CONTRACTOR/OFFEROR | 15C. DATE SIGNED | 16B. UNITED STATES OF AMERICA | 16C. DATE SIGNED |
| (Signature of person authorized to sign) | | BY (Signature of Contracting Officer) | |

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Prescribed by GSA FAR (48 CFR) 53.243

The purpose of this amendment is to make the following changes to the solicitation: 1). Extend the bid opening, 2). Provide date and time for site visit, and 3). Provide answers to technical questions.

1. Block 8 Offer Due Date/Local Time is changed FROM 16 Dec 2006/1700 hrs TO 23 Dec 2006/1700 hrs.
2. Offerors wishing to do a site visit may do so by submitting their name to Ms. Alice Bailin at alice.bailin@pco-iraq.net by Thursday, 14 December 2006 NLT 1700 hrs Baghdad time. Once all names have been received, you will be notified of the site visiting schedule for Saturday, 16 December 2006. You will need to bring with you two form of picture identification.
3. Following are the answers to the technical submitted questions.

Question 1

The original WBB was designed without the consideration for VideoTele-Conferencing (VTC). Thus, in order to accommodate the VTC, additional bandwidth will be required for the IP network. Does the contractor have to increase the bandwidth of the network for the VTC?

Answer:

The WBBN was designed to support 35 ministries connectivity and all applications the Iraqi government plan to implement. Currently the WBBN is used in 20 ministries for internet browsing. The WBBN have enough bandwidth capacity based on original network design each sector has a maximum payload throughput of 33 Mbit/s. There are 8 sectors per node and 4 nodes in the network. The backhaul for each node is STM-1 or approximately 140 Mbit/s of payload throughput. The VTC application will add any where from 384 kbits to 768 kbits during VTC session. The contractor is responsible during the design addition of 17 WBBN CPE site to ensure new site have capacity and the WBBN growth is balanced.

Question 2

Will the existing WBB network schematics (Point-to-Multipoint) be provided showing the current network routing so that required links can be added if they do not exist? For example, Ministry of Finance (Main), CPI, Prime Minister, Counter Terrorism Bureau and Counter-Terrorism Command in Group 1, and others in Groups 2 and 3.

Answer:

Power Point Presentation: Attachment 1

Question 3

Does the contractor have to provide additional WBB equipment? In order to provide comparable WBB equipment to augment the existing WBB network, make/model of existing WBB network equipment will be required. The WBB equipment information needs to be provided so that they can be priced correctly.

Answer:

Contractor shall procure and provide 17 WBB CPE equipments listed below is equipments list of each WBBM CPE

| | |
|---|---|
| Half Sized Cabinet | 1 |
| Smaller UPS Capacity Configuration | 1 |
| APC Remote Power Strip | 1 |
| DPS Telecom Net Guardian Environmental Monitor-Eliminate | 1 |
| Ericsson Mini-Link BAS LMDS Flex/NU Access Terminal (CPE) | 1 |
| Generic 24 Port Switch (Non-Managed) | 1 |
| Lower End Firewall | 1 |
| Lower End Cisco Router | 1 |

| | | |
|---|----|--|
| CAT 5E Patch Cables 10 ft. | 12 | |
| APC Surge Arrestor Power Strips | 1 | |
| APC Rack Cable Management Kit | 1 | |
| Air Conditioning Units | 1 | |
| Non-Penetrating Mount with Lightening Protection | 1 | |
| Cable Channel (meters) | 15 | |
| AC Power Generation 25 Kw | 1 | |
| RF Cables (meters) | 50 | |
| Lightening Protection (Wire, Connectors & Grounding Hardware) | 1 | |
| ODU | 1 | |

Question 4

Is there an IP PBX available at the existing NOC for the VTC/VOIP? If yes, what make/model (e.g. Cisco Call Manager, etc.) is the PBX and what version (e.g. 4.0, 5.0, etc.) is the software?

Answer:

There is no VOIP or VTC equipments now at GOIC or at any sites. This is contractor responsibility to design & provide all VTC Bridge and VOIP solutions proposed by SOW.

Question 5

Do you want the contractor to provide separate switching equipment at each site even if the existing PBX systems work with the proposed Cisco VTC/VOIP?

Answer:

The Contractor must provide all required switching equipment at each site there is no PBX exist at any site now

Question 6

What is the current traffic capacity or bandwidth (Mbps) of the existing WBB links? This is crucial due particularly to the addition of VTC and VOIP phones which will require a minimum of 16Kbps (QoS) dedicated bandwidth for each voice channel.

Answer:

The capacity is approx 4 Mbps at each site.

Question 7

By means of CPE (Customer Premise Equipment), does the contractor have to include LAN equipment (Ethernet switch, patch panels/cords, etc.) and cabling (Category 5E and above), including RJ45 jacks?

Answer:

Contractor must provide require switches and VIOP IAD and cabling (Category 5E / 6E and Fiber cable and Ethernet to Fiber conversion if the VTC is located far from the switch location in each site to ensure VTC and VOIP operation.

Question 8

Cisco TelePresence 1000 or 3000 that works with Cisco Unified Conference Station 7936 includes Plasma Display; do you prefer to have the Tandberg 8000 MXP Video Conference system instead?

Answer:

VTC equipment = Tandberg MX 8000
VOIP = Cisco Technology

Question 9

On Page 7, Section 5, Bullet 5 of the SOW there is a codex requirement for G.732.1. Can you explain what application will be associated with this compression? If the vendors system does not support this feature will their solution be non-compliant?

Answer:

ITU G.723.1 standard. It is intended for very low bit rate speech applications such as PSTN video telephony/conferencing and is the recommended speech coder for H.324 video telephony systems. VTC and VOIP are two applications proposed with this SOW. If the vendors system does not support this feature then the proposed solutions should account for any impact this may cause and shall provide ITU standard that offer similar compression .

Question 10

The Background statement of this project states that this Network implementation is for Secure Communications. What is the level of secure connectivity that needs to be implemented?

Answer:

This network is private government network which is already secure with end to end firewall and over air encryptions. At minimum the proposed solution should provide over the air encryption the wireless signal of the WBB network like any wireless network is openly available to be intercepted given proper equipment and expertise. While this is more difficult with the 23 & 26 GHz technology utilized. VPN/Encryption solution to protect both the data and voice traffic carried over the WBB Network should be implemented, even if the wireless signal is intercepted. The actual data or voice communication cannot be extracted or understood since it is encrypted with a highly secure algorithm. The solution utilizes fire walling & VPN technology from Lucent Technologies Brick Firewall product line to create a fully encrypted VPN tunnel between a Brick Firewall/VPN Appliance located at the GoIC and a comparable device located at each customer premise. This allows encrypted VPN tunnel to be established, the resulting private encrypted connection between the two endpoints secures the data carried between these two points.

Question 11

The Statement of Work describes the Management and Operations of the WBBN VTC and VOIP Switched Network and requires contract to provide training on all installed equipment to select IT and administrative staff.

a. Will English be the language used to deliver the training to the select staff?

b. Does the existing administrative staff have experience in provisioning Voice Circuits for use with VOIP Gateways and Call Managers?

c. Is the Skill level of the select staff at a minimum able to understand the key concepts of VLAN's, IP Addressing, DNS, DHCP, Active Directory?

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d. Does the staff handle end user support for the existing WBBN Infrastructure including but not limited to tracking and determining faults on the network, determining access and distribution termination and connectivity issues?

e. Does the Ministry of Communications team State Company of Internet? Services currently maintain existing infrastructure including pre-defined tasks such as back-up procedures, fault identification of components of the WBBN switched network, Network Availability Testing and Administration.

f. Does the Current Voice network currently have a connection to the existing Iraq National telephone Network or equivalent services?

Answer:

a. The preferred language is Arabic; English is acceptable (Translator is available also).

b. Existing administrative staff has no experience in provisioning Voice Circuits for use with VoIP Gateways and Call Managers the SCIS team need training which is specified in the SOW.

c. Some SCIC engineers have training and SCIC staff are able to understand the key concepts of VLAN's, IP Addressing, DNS, DHCP, Active Directory? The SOW specifies training for SCIC for provisioning Voice Circuits for use with VoIP Gateways and Call Managers and VTC bridge.

d. The staff handles end user support for the existing WBBN infrastructure including tracking and determining faults on the network, determining access and distribution termination and connectivity issues. We also have company who manage the O&M for WBBN network they are actively handling all these issues.

e. The Ministry of Communications team State Company of Internet Services currently maintain existing infrastructure including pre-defined tasks such as back-up procedures, fault identification of components of the WBBN switched network, Network Availability Testing and Administration. We also have company who manage the O&M for WBBN network they are actively handling all these issues.

f. There is no current voice network installed. This SOW requires a VOIP solution. Part of the VOIP solution should include VOIP to Iraqi Ministry of communication PSTN gateway.

Question 12

The Statement of Work specifies that the VOIP and VTC Switching, call management and feature complex will be centralized in a NOC facility. No Location has been identified as the host facility for the NOC.

a. Has the NOC infrastructure including Facility, Building, Power, Cable Plant been identified?

b. Is the current list of facilities that have been provided with this SOW complete?

c. Does existing infrastructure of the WBBN network has capacity for these functions?

Answer:

The Statement of Work specifies that the VOIP and VTC Switching, call management and feature complex will be centralized in a NOC facility. NOC is functional and already located at International Zone, NOC located at GOIC (Government of Iraq Center)

a. The NOC infrastructure including Facility, Building, Power, Cable Plant has been identified (GOIC at International Zone) all power and cable is already installed and operational.

b. Is the current list of facilities that have been provided with this SOW complete? **Yes.**

c. Does existing infrastructure of the WBBN network has capacity for these functions? **Yes**

Question 13

The Statement of Work specifies that the Initial Implementation should have the capability to grow.

- a. Has an annualized growth rate been established for budgeting purpose for the term of usable life on this installation?
- b. Does the growth included any outside use of the WBBN VOIP/VTC system by any non-governmental or non-ministry agencies not identified?

Answer:

The Statement of Work specifies that the Initial Implementation should have the capability to grow.

- a. This SOW call for growth and expansion by 17 sites for this year.
- b. The system will be used by all users in the SOW list and may be used by other agencies.
- c. Growth means the ability to add more sites for the WBBN.

Question 14

Fault management of the Trunk and Network Connections for the VOIP/VTC system is listed as the responsibility of the contractor.

- a. What level of availability and fault management has been provided within the exiting WBBN network?
- b. Is there back-up power and redundant cabling infrastructure to sustain multiple VOIP/VTC Central controllers/gateways?
- c. The WBBN network does not currently cover 17 sites of the required SOW. The locations /agencies are listed but no physical location is given.
- d. Can you provide GPS, Site location references or Address locations prior to acceptance of the SOW?

Answer:

- a. At the time of award the network will have high level of availability. Currently there is a company who manages O&M of this network and keeps the network up all the time and sends team to repair and maintain the network.
- b. Yes there is backup power in most sites except for few sites which we are working to resolve.
- c. Physical location and Grid will be provided via another amendment.
- d. Can you provide GPS, Site location references or Address locations prior to acceptance of the SOW? Yes

Question 15

The actual technical performance requirements and capability to maintain 80% on net calling and concurrent simultaneous use of the VTC traffic will be dependent on the QOS and Services to be implemented as part of the installation of this Network.

- a. Can you provide a listing of the existing trunk interfaces to be provided at the central site in order to support the 768 VOIP and 46 VTC users on this network?
- b. Will individual VTC Sessions also occur between individual sites on the WBBN Network?
- c. Will these sessions need to be managed and monitored by the NOC?

Answer:

a. There is Wireless truck operating at 35 sites with up to 4 Mbits Capacity. Contactor need to add additional 17 wireless trucks.

B .Will individual VTC Sessions also occur between individual sites on the WBBN Network? **Yes**

c. Will these sessions need to been managed and monitored by the NOC? **Yes**

Question 16

The Statement of Work provides for the proposed solution to be exportable?

a. What is meant by this?

b. Do you expect to back-up and restore the system configurations to a different site in the case of emergencies?

c. Do you want to be able to co-locate this infrastructure with other Commercial Internet / Telephone Services?

Answer:

a. The equipments and technology proposed should not have any export restrictions.

b. Do you expect to back-up and restore the system configurations to a different site in the case of emergencies?

Yes

c. The infrastructure is now located at Government of Iraq Center (GOIC) and is operated by State owned company for internet service. SCIS is Iraqi internet ISP and their sister company, which is not located at this location, are the telephone service provider in Iraq. In the future, the SCIS may choose to collocate this infrastructure at telecommunications building been built as telecommunications center.

Question 17

The Scope of Work states support for Voice Messaging.

a. Does each site need local access to a centralized voice messaging system?

b. Do individual users at each site need to be supported and trained by the (SCIS) support staff?

c. Do voice messages needed to be archived for 1 day, 1 week, 1 month, or 1 year?

Answer:

a. All user need access to centralized voice messaging system. Contactor should design accordingly.

b. The VTC and VOIP user need to be trained one day on using the VTC and VIOP set. Training should also provide for people who mange and configure and provision VTC and VIOP calls.

c. Voice messages needed to be archived for one month.

Question 18

Section 6 of the Statement of Work specifies the schedule for Installation and testing of the VTC and VOIP equipment. What is the required schedule for site survey, site engineering, site prep, installation of CPE, and equipment hookup at the 17 sites?

Answer:

All in 3 months.

Question 19

What environmental conditions will the customer provide for the equipment?

Answer:

HVAC at 35 sites, contractors must provide for 17 Site.

Question 20

What is the current Wireless Architecture? (Mesh? Partial Mesh? Hub and Spoke?)

Answer:

Hub

Question 21

Can a current architecture diagram be provided?

Answer:

Architecture Diagram: Attachment 1

Question: 22

What is the current total bandwidth available to each site?

Answer:

Up to 4 Mbites

Question 23

How much of the total bandwidth is currently available per site or what is the estimated current usage per site?

Answer:

4 Mbps

Question 24

What equipment comprises the LAN/WAN infrastructure? (Router Models, Switch Models, Interface cards and modules)

Answer:

CPE Newtwork Site: Attachment 2

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Question 25

Is Quality of Service (QoS) designed and implemented on the network?

Answer:

QoS is built in the WBBN network, implementation is recommended.

Question 26

Is there a single central "hub" site or are there redundant connections to a fault tolerant alternate "hub". (Only applies to non mesh architectures)

Answer:

Yes this is single hub site.

Question 27

VOIP System Questions

- a. Is remote site survivability in the event of WAN loss a requirement?
- b. Which sites will require survivable access?
- c. Will there be external voice connectivity (PSTN Access, PBX connectivity) at any remote sites or will all external and site-to-site access be provided from the central site? (Dependant on current WBBN architecture)
- d. What is the maximum number of conference participants in a single voice conference?
- e. Should voice calls be encrypted from phone to phone?
- f. How many E1 PRA trunks are required <<image001.jpg>> per site or collectively at the central site?

Answer:

- a. Is remote site survivability in the event of WAN loss a requirement? **Yes**
- b. Which sites will require survivable access? **All sites**
- c. At NOC (the central Hub site)
- d. What is the maximum number of conference participants in a single voice conference? **60**
- e. Should voice calls be encrypted from phone to phone? **Yes**
- f. There are only 20 VOIP users at each site not even ¼ E1
- g. Is there a single "core" or "hub" site where centralized call processing will occur or has an alternate site been designated/connected to provide for fault tolerance? **Yes, there is one Hub which is NOC and it is operational now.**

Question 28

- a. Do you expect the contractor/s to travel directly to Baghdad without US Government assistance?
- b. Are there hotels/lodging available outside of US Government controlled facilities?
- c. Will you issue travel orders for the contractor/s?
- d. Are all of the ministry's in the Green Zone (International Zone)?

Answer:

- a. The contractor/s must travel to Baghdad to perform what is required in the SOW.
- b. There are houses and one hotel (al-Rasheed Hotel for rent, all travel and logistic is the responsibility of the contractor/s.
- c. Once contractor/s win the bid travel order can be obtain. Please consult www.rebuilding-iraq.net for details.
- d. Majority of the ministries are in the Red Zone only 7-8 sites are located at in the IZ.

Question 29

There are 35 sites currently using Microwave radio and base station using 23 and 26 GHz frequency. The addition of 17 sites will require the same technology LMDS 23 and 26 GHz microwave radio technology. What is meant by microwave in this context?

Answer:

Power Point Presentation: Attachment 1

Question 30

- a. What is the latitude and longitude coordinates for each Wireless Broadband location?
- b. What are the radio equipment specifications (Microwave Radios and related equipment) Wireless Broadband specifications?
- c. The locations (buildings) offer or allow for mounting Microwave Antenna systems on the roof top of each building location. Should the proposal include the mounting structures?

Answer:

- a. The latitude and longitude coordinates will be provided via another amendment.
- b. Radio Equipment specifications see the equipment list see Attachment 2
- c. All mounting structure for antenna should be provided by the contractors. Locations of the building will be provided.

Question 31

Where are the sites listed in Table 1 of the referenced solicitation located (i.e., their coordinates)?

Answer:

Sites listed in Table 1 will be provided via another amendment. For complete list of WBBN CPE equipment see Attachment 4.

Question 32

- a. Are the 38 sites for small, medium or large conference rooms?
- b. Are they just office settings where we would provide a web cam and VTC SW for a desktop system?
- c. Do they need to share data during a call?
- d. Do they need multipoint, do you have access to a bridge or are they all point to point calls?

e. Do you have monitors and audio for these 38 systems?

Answer:

- a. All VTC set will be place in government conference room regardless of size of the room.
- b. The VTC are dedicated video conferencing equipment Tandberg MPX 8000.
- c. VTC and VOIP and internet access will all be shared during VTC and VOIP calls.
- d. VTC bridge is required.
- e. VTC sets include monitors and audio equipment (consult Tandberg MPX 8000 data sheet)

Question 33

- a. What is the currently implemented hardware for the existing WBBN? Could the hardware manufacturer and model numbers please be provided? What specific WBBN equipment is required at the 17 sites not currently on the WBBN, including: antennas, base station equipment, routers, and switches? What ports/interfaces are available?
- b. Is the WBBN a full mesh with call control / administrative functions at the NOC?
- c. Is it a requirement to install the same exact hardware (or current equivalent model from the same manufacturer) for the new sites as the equipment being used at the current sites?
- d. What is the existing WBBN bandwidth capacity at each location?
- e. What are the existing central management platform and management applications?
- f. Please provide the existing WBBN Network Routing Diagram.
- g. Are the existing points of integration Cisco switches and routers?
- h. Is there an existing Cisco Call Manager? What is the current licensing?
- i. Is there an existing VTC Gateway call manager? What is the current licensing?
- j. What is the current Internet capacity being utilized?
- k. Is the existing VOIP Call Manager currently interfacing with any outside PBX's?
- l. What is the requirement for simultaneous site to site VOIP calls? All lines any time?
- m. What is the requirement for simultaneous site to site (any to any) VTC connections?
- n. What is currently available for spare equipment for the ongoing operations and maintenance consideration?
- o. Is the WBBN Network based on 802.16 .e.g. – WiMax?
- p. What are the PSTN and Internet Gateway capacity requirements and interfaces are required at the HUB? At each Ministry location?

q. Is the existing WBBN setup with COS/QOS? If so which method – e.g. Diffserv / Intserv / Bandwidth on Demand, etc.?

r. Who is managing the LAN for all the remote 46 locations? Are the VOIP devices and VTC devices to be placed on those LANs or are separate LANs to be provided as part of the installation?

Answer:

a. CPE Network Site: Attachment 2

b. Yes, there is Hub NOC with network management and control

c. Yes, Same or Equal

d. Approximately 4 Mbits

e. Vendor specific platform (Erickson)

f. Will be provided via another amendment

g. Yes

h. No

i. No

j. Utilization Status Summary: Attachment 3

k. There is no existing VOIP or PBX gateway

l. All lines all the times

m. Simultaneous site to site (any to any) multi session (up to 4) Simultaneous

n. WBBN CPE few are available

o. LMDS 26 & 23 GHz point to point and point to multi point.

p. PSTN gateway shall support all VOIP sites user specified in the SOW.

q. QoS is available on the WBBN here is no practical QoS yet.

r. IAD switch shall be provided at all sites and should integrate at Site LAN of point of WBBN CPE demarcation switch.

Question 34

a. Is providing the furniture and room preparation for the conferencing room at each site also the responsibility of the contractor?

b. In the initial design of the WBB Network, there have been two different WBB sites – a full system and half system. Can you please specify which type of site is required for the new 17 WBB sites in this solicitation?

c. Shall we assume any tower constructions for the 17 WBB sites?

d. Our assumption is that the contractor will not be responsible for providing the training facilities. Can you please confirm?

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- e. Do we also have to provide firewalls for each site? If yes, can you please elaborate?
- f. According to our understanding, VOIP was initially part of the WBBN project. Are there currently any VOIP setup/equipment in use in WBB network?
- g. Is the contractor responsible for providing backup power (UPS) for the system (WBBN and Video conferencing)? If yes, for how many minutes should the system be able to work on backup power?
- h. What is the currently approved (licensed) frequency range for the WBB network?
- i. As these sites were initially planned to be installed under the separate WBBN contract? Can you please inform us if the RF and IP designs for the 17 WBB sites are already available or not?
- j. Does the contractor have to provide any HVAC or standby generators for the sites?

Answer:

- a. No
- b. Half System
- c. Tower may be required if line of sight could not be achieved.
- d. Yes, Part of CPE equipments list firewall is required. See equipment list and schematic.
- e. No.
- f. UPS 4 hrs is required for WBBN CPE. It is not required for VTC sets.
- g. 26 GHz & 23 GHz are approved.
- h. No, RF and IP are done for this site. The contractor is responsibility to implement this. There is RF and IP design currently used by the system. The contractors must integrate the 17 site within already operational network.

Question 35

- a. What is the number of users at each of the 38 sites?
- b. What is the existing level of connectivity at each of these sites and the quality thereof?
- c. What is the availability of bandwidth at each of the sites?
- d. What is the existing infrastructure at each of the sites, i.e. hardware?
- e. What is the geographical spread of the 38 sites?

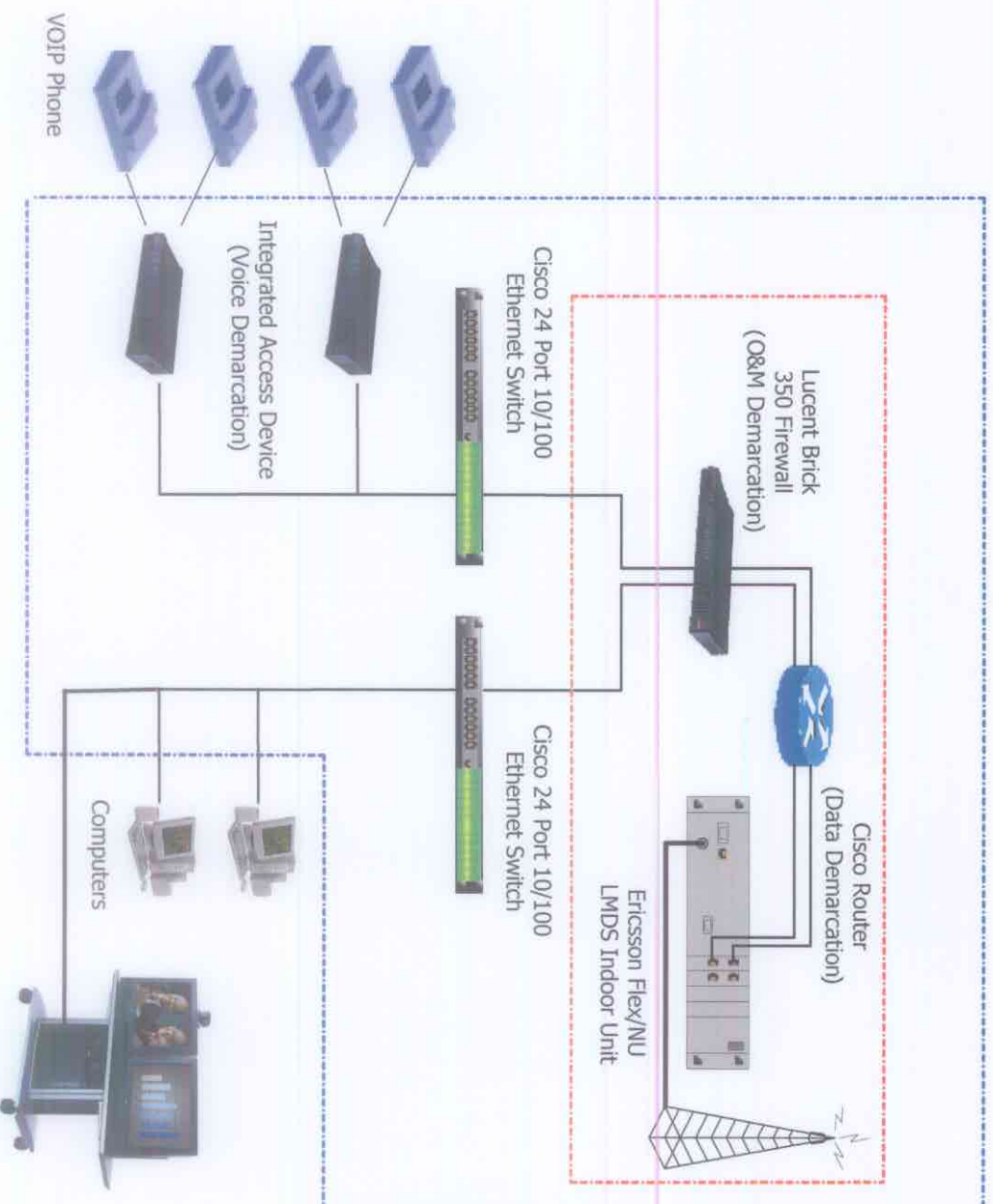
Answer:

- a. Approximately 75 users
- b. There is local multi distribution system wireless mode at 35 Ministry which are already operational.

- c. 4 Mbps
 - d. See Attachments #1,2, and 3
 - e. Approximately 1 to 12 km
4. List of attachments:

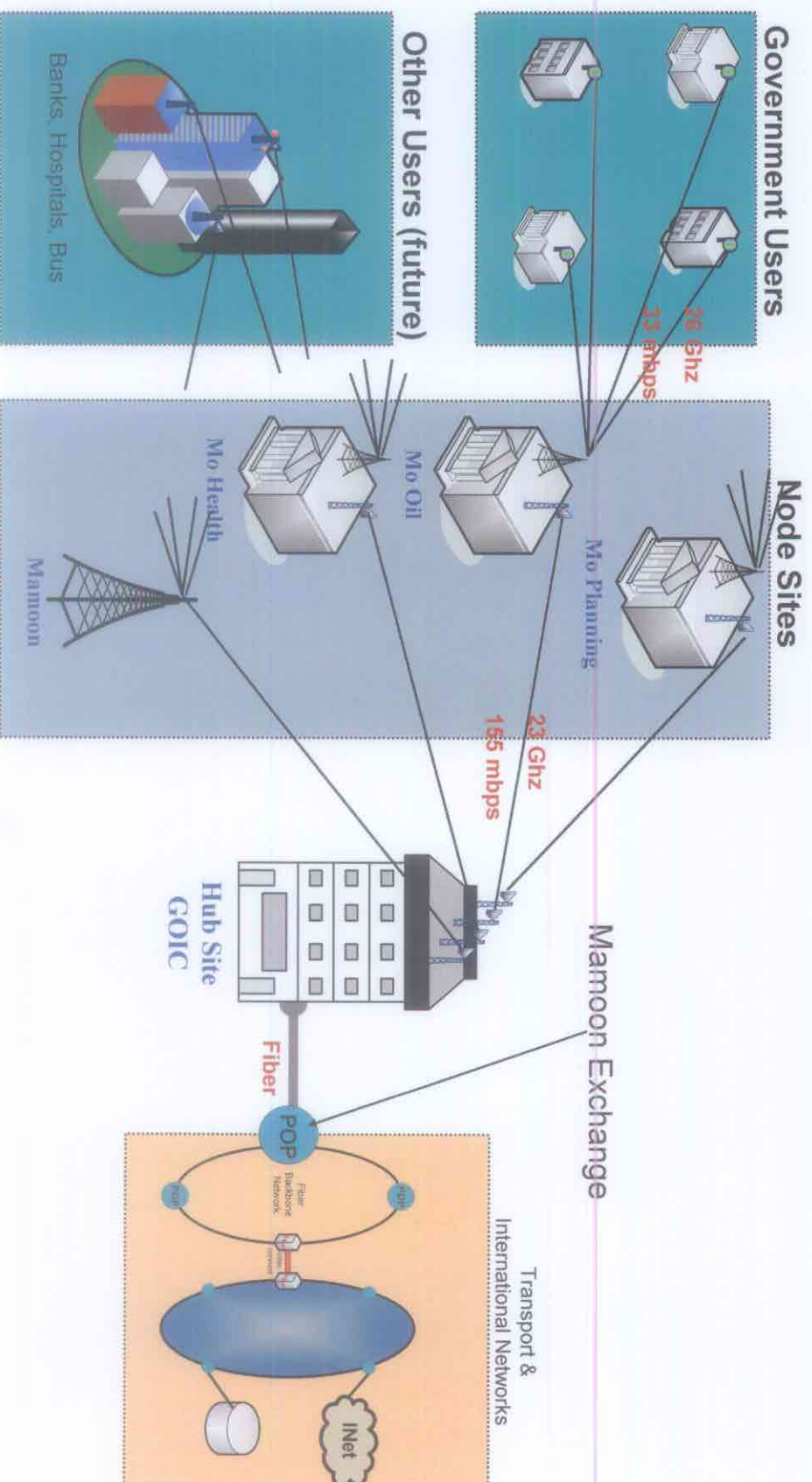
Attachment 1: Power Point Presentation
Attachment 2: CPE Network Site
Attachment 3: Utilization Status Summary

WBBN LMDS CPE Network Site



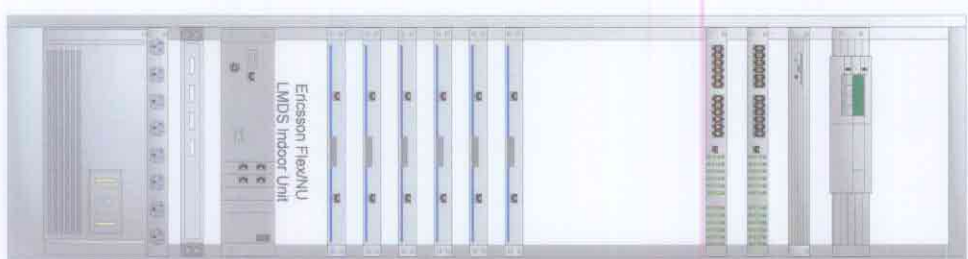
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WBB Network Overview

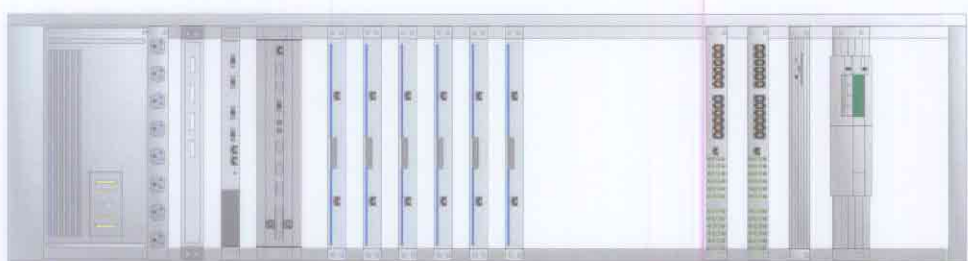


WBB Equipment Example

LMDs
Customer Premise
Cabinet



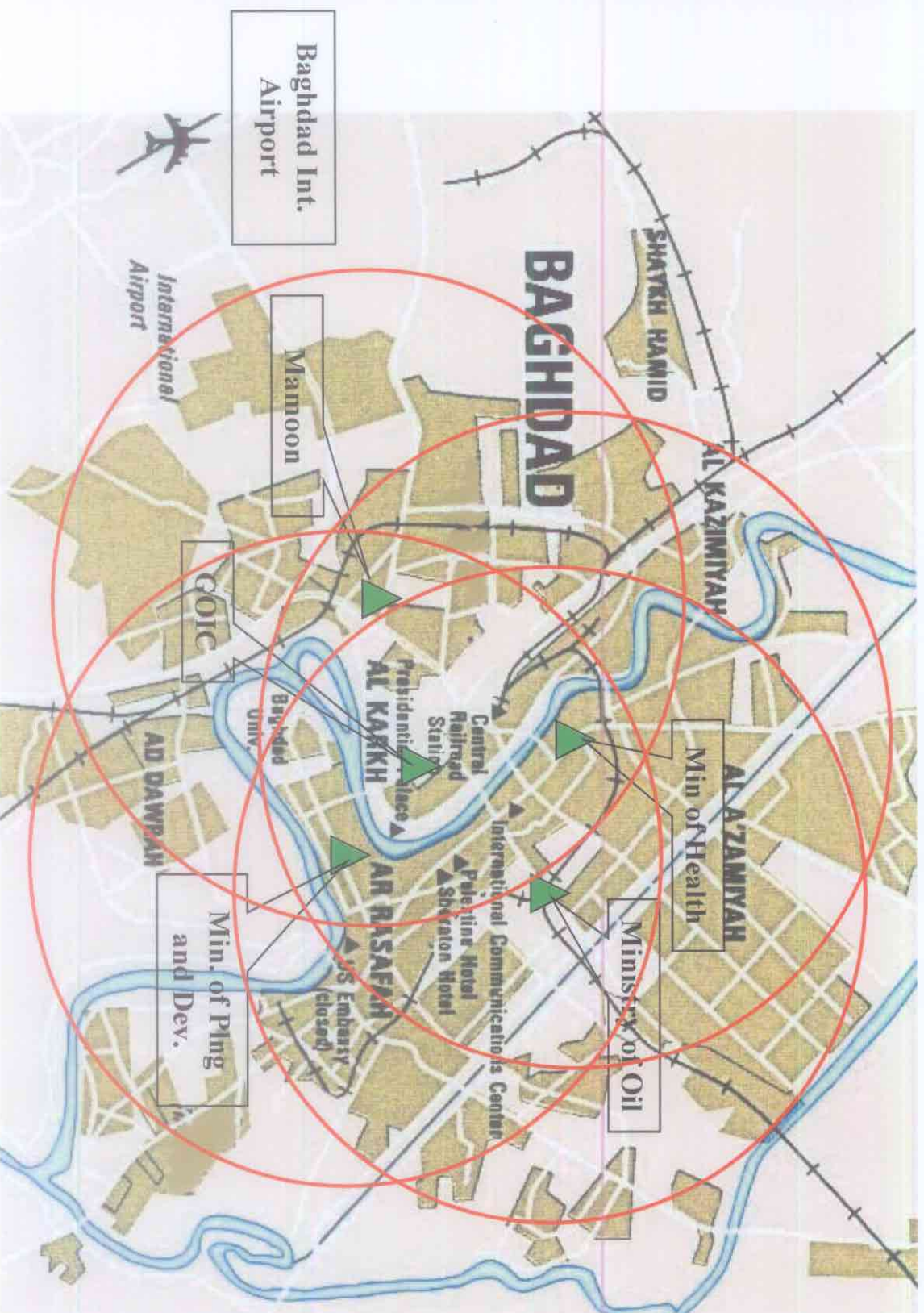
High-Capacity PTP
Customer Premise
Cabinet



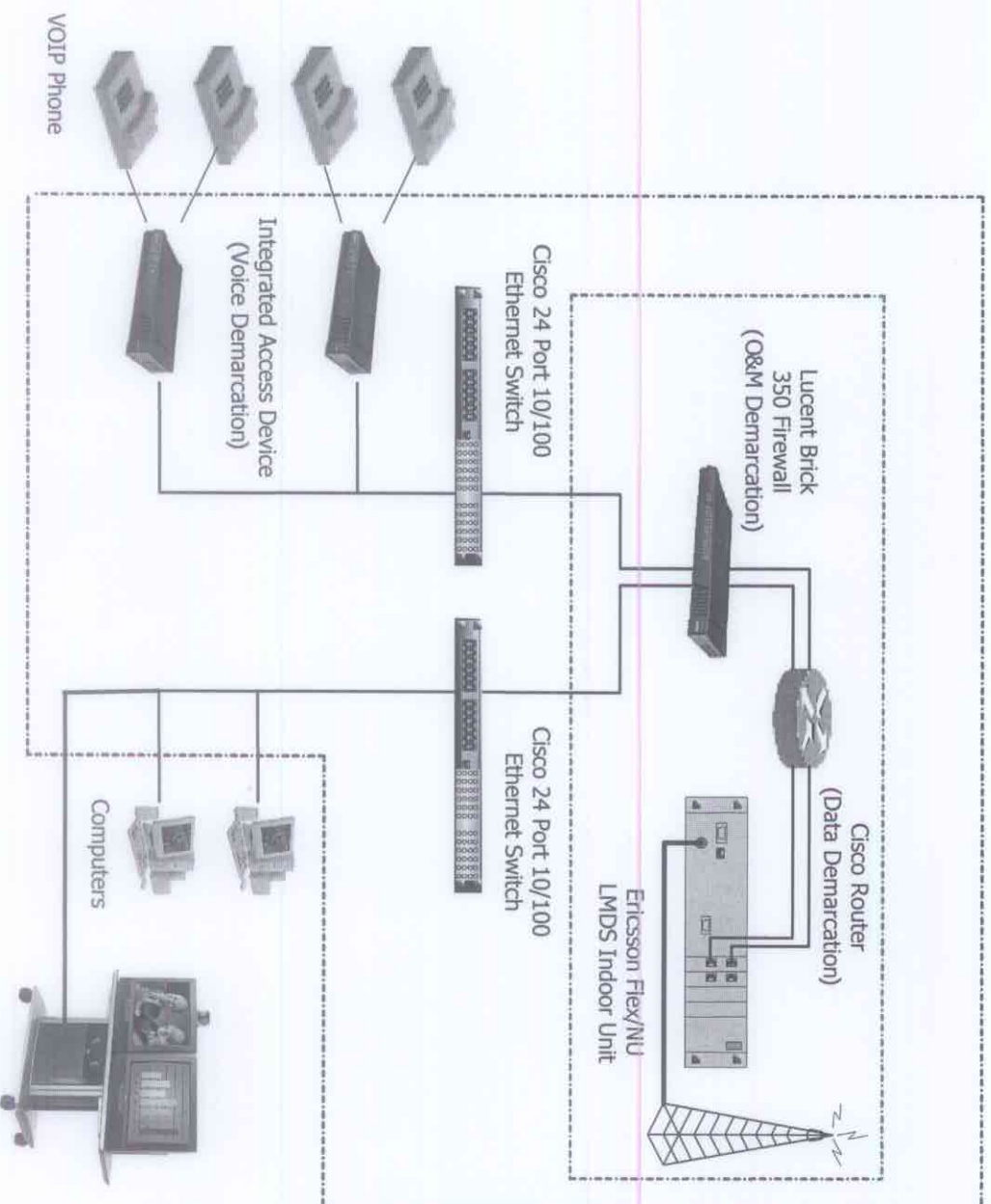
- Cisco 2851 Router
- Lucent Brick 350 Firewall/VPN Appliance
- Cisco 2950 24 Port Switch (Data)
- Cisco 2950 24 Port Switch (Voice)

- Mediatix 1124 IAD (#6)
- Mediatix 1124 IAD (#5)
- Mediatix 1124 IAD (#4)
- Mediatix 1124 IAD (#3)
- Mediatix 1124 IAD (#2)
- Mediatix 1124 IAD (#1)
- Ericsson PTP Microwave Indoor Unit
- Ericsson ATM to Ethernet Converter
- NetGuardian Environmental Monitor Remote Controlled Power Strip
- UPS & Power Conditioner

WBB Coverage



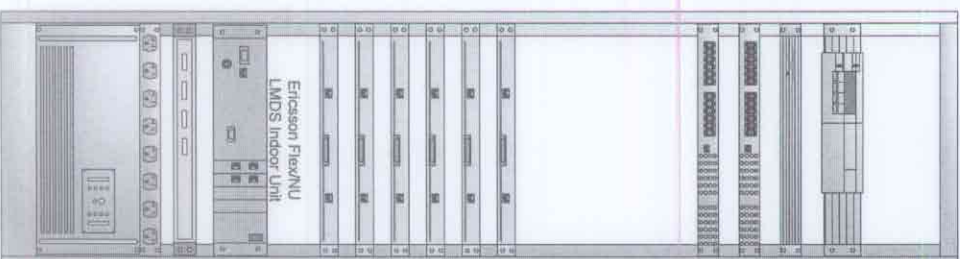
WBBN LMDS CPE Network Site



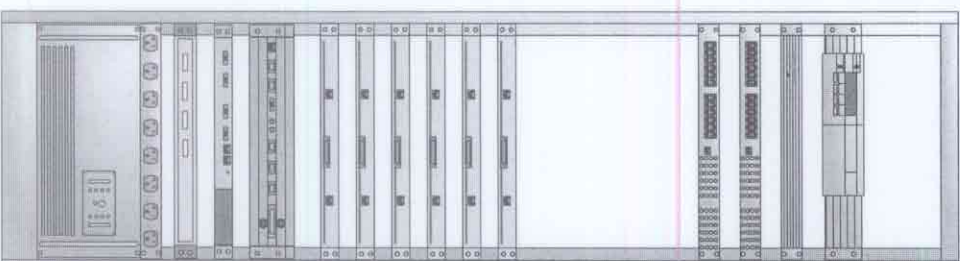
12/12/2006

WBB Equipment Example

LMDs
Customer Premise
Cabinet



High-Capacity PTP
Customer Premise
Cabinet



- Cisco 2851 Router
- Lucent Brick 350 Firewall/VPN Appliance
- Cisco 2950 24 Port Switch (Data)
- Cisco 2950 24 Port Switch (Voice)

- Mediatix 1124 IAD (#6)
- Mediatix 1124 IAD (#5)
- Mediatix 1124 IAD (#4)
- Mediatix 1124 IAD (#3)
- Mediatix 1124 IAD (#2)
- Mediatix 1124 IAD (#1)

- Ericsson PTP Microwave Indoor Unit
- Ericsson ATM to Ethernet Converter
- NetGuardian Environmental Monitor
- Remote Controlled Power Strip
- UPS & Power Conditioner

CPE Equipment List

| Item No. | Bagdad Wireless Broadband Network | Qty |
|---------------------------------------|---|-----|
| Customer Premise Cabinet | | |
| 2.17 | Half Sized Cabinet | 1 |
| 2.29 | Smaller UPS Capacity Configuration | 1 |
| 2.27 | APC Remote Power Strip | 1 |
| 2.18a | DPS Telecom NetGuardian Environmental Monitor-Eliminate | 0 |
| 2.6 | Ericsson Mini-Link BAS LMDS Flex/NU Access Terminal (CPE) | 1 |
| 2.15 | Generic 24 Port Switch (Non-Managed) | 1 |
| 2.15 | Lower End Firewall | 1 |
| 2.14 | Lower End Cisco Router | 1 |
| 2.33a | CAT 5E Patch Cables 10 ft. | 12 |
| 2.40 | APC Surge Arrestor Power Strips | 1 |
| 2.44 | APC Rack Cable Management Kit | 1 |
| Site & Rooftop Preparation | | |
| 3.1 | Air Conditioning Units | 1 |
| 3.2 | Non-Penetrating Mount with Lightning Protection | 1 |
| 3.3 | Cable Channel (meters) | 15 |
| 3.4 | AC Power Generation 25 Kw | 1 |
| 3.6 | Lightening Protection (Wire, Connectors & Grounding Hardware) | 1 |

12/12/2006

| WBB Network Utilization Status Summary As of December 7th, 2006 | | Total Input and Output IP Packets on gateway router | Estimated bytes of data transferred based on a theoretical 64 byte packet size |
|--|--|---|---|
| Site/Customer | | | |
| Baghdad Mayor | | 2,594,456 | 166,045,184 |
| Ministry of Finance-Audit | | | 0 |
| Ministry of Justice | | | 0 |
| Ministry of Environment | | | 0 |
| Ministry of Labor & Social Affairs | | 19,576,437 | 1,252,891,968 |
| Ministry of Municipality & Pub Wrks-Annex | | | 0 |
| Baghdad University | | 336,562 | 21,539,968 |
| Dora Power Plant | | 665,778 | 42,609,792 |
| Central Bank DPC | | | 0 |
| Ministry of Municipality & Pub Wrks-Main | | | 0 |
| Ministry of Defense | | 17,869,313 | 1,143,636,032 |
| Ministry of Displacement & Migration | | | 0 |
| Ministry of Education | | | 0 |
| Ministry of Housing & Construction | | | 0 |
| Ministry of Human Rights | | 53,852 | 3,446,528 |
| Ministry of Youth & Sport | | 360,543 | 23,074,752 |
| Palace-Embassy | | 422,942 | 27,068,288 |
| Central Bank Main | | 24,750,121 | 1,584,007,744 |
| GoIC | | 5,994,784 | 383,666,176 |
| Ministry of Health | | 429,966 | 27,517,824 |
| Ministry of Oil | | 5,429,194 | 347,468,416 |
| Ministry of Planning & Development | | | 0 |
| Ministry of Trade | | 3,216,020 | 205,825,280 |
| Ministry of Agriculture | | 16,914,457 | 1,082,525,248 |
| Ministry of Culture | | 4,391 | 281,024 |
| Ministry of Higher Education | | 1,728,244 | 110,607,616 |
| Ministry of Interior | | 48,298,505 | 3,091,104,320 |
| Technology University | | 66,089 | 4,229,696 |
| Ministry of Communications-Spectrum | | 6,466 | 413,824 |
| Ministry of Finance-Main | | 572,108 | 36,614,912 |
| Ministry of Communications | | | 0 |
| Ministry of Electricity | | 281,382 | 18,008,448 |
| Ministry of Oil-SOMO | | 101,423,673 | 6,491,115,072 |
| Ministry of Water Resources | | 50,359,349 | 3,222,998,336 |
| Ministry of Industry & Minerals | | | 0 |

* Note, these statistics are total packets, not packets per datum. This is NOT a data transfer rate.

Also note these are since the statistics counters were reset. These are not total stats since the site was u